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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,971	06/26/2003	Michael A. Pate	200207145-1	7427

7590 10/06/2005

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EXAMINER	
BRAUTIGAM, ALYSA N	

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/608,971	PATE, MICHAEL A.	
	Examiner	Art Unit	
	Alysa N. Brautigam	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/26/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. [1] as follows:

> The later-filed application must be filed by an inventor or inventors named in the previously filed application.

Claim Objections

2. Claim 32 objected to because of the following informalities: Line 3 states "...characteristic of **a** at least a..." where the first "a" should be removed. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith (6,285,349).

5. In regards to claim 1, Smith discloses a method of projecting an image with display-condition compensation, the method, comprising:

- projecting a principal image onto a principal area of a surface (col. 3:1-3);
- projecting an intended calibration image onto a calibration area of the surface when the principal image is not projected onto the calibration area (col. 3:18-26, 55-67);
- receiving the calibration image displayed on the surface (col. 3:18-26, 55-67);
- comparing the received calibration image to the intended calibration image to determine an observed difference (col. 3:18-26, 55-67); and
- modifying projection of the principal image based on the observed difference (col. 3:31-35, 40-42).

6. In regards to claim 2, Smith discloses the method of claim 1, as disclosed hereinabove. In addition, Smith discloses where comparing the received calibration image to the intended calibration image includes determining a color characteristic of the received calibration image and comparing it to a corresponding color characteristic of the intended calibration image (col. 3:18-26, 55-67; col. 4:65 through col. 5:1).

7. In regards to claim 3, Smith discloses the method of claim 1, as disclosed hereinabove. In addition, Smith discloses where projecting a principal image includes projecting a principal image without a portion of the principal image corresponding to the calibration area, and projecting a calibration image includes projecting the calibration image onto the calibration area while projecting the principal image without the portion

(col. 3:18-26, 55-67 where the missing portion could conceivably be the entire portion; col. 6:37-65 where the movement of the single spot around the displayed image could also conceivably be what applicant claims).

8. In regards to claim 4, Smith discloses the method of claim 1, as disclosed hereinabove. In addition, Smith discloses where comparing the received calibration image to the intended calibration image includes comparing an intended calibration image color characteristic to a received calibration image color characteristic corresponding to at least a portion of the calibration area (col. 3:18-26, 55-67; col. 4:65 through col. 5:1).

9. In regards to claim 5, Smith discloses the method of claim 1, as disclosed hereinabove. In addition, Smith discloses the method further comprising:

- segmenting the intended calibration image into a plurality of subunits (col. 7: 11-33; col. 3: 26-35, 40-42 disclose the calibration as done on a pixel by pixel basis which is the segmentation of the calibration image into a plurality of subunits) and
- segmenting the received calibration image into a corresponding plurality of subunits (col. 7: 11-33; col. 3: 26-35, 40-42 disclose the calibration as done on a pixel by pixel basis which is the segmentation of the calibration image into a plurality of subunits);
- where comparing the received calibration image to the intended calibration image includes determining a color characteristic for each intended calibration image subunit (col. 7: 11-33; col. 3: 26-35, 40-42 disclose the

calibration as done on a pixel by pixel basis which is the segmentation of the calibration image into a plurality of subunits; col. 5: 9-11),

- determining a color characteristic for each received calibration image subunit (col. 7: 11-33; col. 3: 26-35, 40-42 disclose the calibration as done on a pixel by pixel basis which is the segmentation of the calibration image into a plurality of subunits and wherein the color characteristic is the light); and
- comparing the intended calibration color characteristic to the received calibration image color characteristic for at least one subunit (col. 3:18-26, 55-67).

10. In regards to claim 6, Smith discloses the method of claim 1, as disclosed hereinabove. In addition, Smith discloses where modifying the projected principal image includes determining a correction based on the observed difference (col. 3: 31-35,40-42).

11. In regards to claim 7, Smith discloses the method of claim 6, as disclosed hereinabove. In addition, Smith discloses where modifying the projected principal image includes applying the correction to principal image data (col. 3: 31-35,40-42).

12. In regards to claim 8, Smith discloses the method of claim 6, as disclosed hereinabove. In addition, Smith discloses where modifying the projected principal image includes applying the correction to commands received by a light engine to create the projected principal image (col. 3: 31-35,40-42; col. 4:5-16).

13. In regards to claim 9, Smith discloses the method of claim 6, as disclosed hereinabove. In addition, Smith discloses where modifying the projected principal image includes applying the correction to one or more operating parameters of a light engine used to create the projected principal image (col. 3: 31-35,40-42; col. 4:5-16).

14. In regards to claim 10, Smith discloses the method of claim 1, as disclosed hereinabove. In addition, Smith discloses where projecting the principal image includes projecting the principal image from at least a first light source, and projecting an intended calibration image includes projecting the intended calibration image from at least a second light source (col. 2: 40-44).

15. In regards to claim 11, Smith discloses the method of claim 1, as disclosed hereinabove. In addition, Smith discloses further comprising:

- prior to modifying the principal image, modifying the calibration image (col. 3:40-42 where the same multiplication applied to any other image would be applied to the calibration image);
- projecting the modified intended calibration image onto the calibration area of the surface when the principal image is not projected onto the calibration area (col. 3:18-26, 55-67),
- receiving the modified calibration image displayed on the surface (col. 3:18-26, 55-67); and
- comparing the received modified calibration image to the modified calibration image to determine an observed difference (col. 3:18-26, 55-67).

16. In regards to claim 12, Smith discloses the method of claim 1, as disclosed hereinabove. In addition, Smith discloses where comparing the received calibration image to the intended calibration image includes:

- determining a color characteristic for at least a subunit of the received calibration image (col. 7: 11-33; col. 3: 26-35, 40-42 disclose the calibration as done on a pixel by pixel basis which is the segmentation of the calibration image into a plurality of subunits; col. 5: 9-11); and
- determining a difference between the determined color characteristic and an intended color characteristic of at least a subunit of the intended calibration image (col. 4: 65 through col. 5: 1).

17. In regards to claim 13, Smith discloses the method of claim 12, as disclosed hereinabove. In addition, Smith discloses where modifying the projection of the principal image includes determining a correction configured to reduce the determined difference between the intended and determined color characteristic, and modifying projection of the principal image based on the determined correction (col. 3:18-26, 55-67).

18. In regards to claim 14, Smith discloses the method of claim 13, as disclosed hereinabove. In addition, Smith discloses where modifying projection of the principal image includes modifying principal image data (col. 3: 32-35, 40-42).

19. In regards to claim 15, Smith discloses the method of claim 13, as disclosed hereinabove. In addition, Smith discloses where modifying projection of the principal

image includes modifying one or more light engine commands derived from principal image data (col. 3: 32-35, 40-42; col. 4: 5-16).

20. In regards to claim 16, Smith discloses the method of claim 13, as disclosed hereinabove. In addition, Smith discloses where modifying projection of the principal image includes modifying one or more operating parameters of a light engine (col. 3: 32-35, 40-42; col. 4: 5-16).

21. In regards to claim 17, Smith discloses the method of claim 12, as disclosed hereinabove. In addition, Smith discloses where determining a color characteristic, and determining a difference between the determined color characteristic and an intended color characteristic is repeated for each subunit of the intended calibration image and corresponding subunit of the displayed calibration image (col. 7: 11-33; col. 3: 26-35, 40-42; col. 5: 9-11 disclose the calibration as done on a pixel by pixel basis which is the segmentation of the calibration image into a plurality of subunits).

22. In regards to claim 18, Smith discloses the method of claim 12, where a color characteristic includes one or more of an average red intensity, an average blue intensity, an average green intensity, average color, chromaticity, color temperature and luminance (col. 4: 65 through col. 5: 1).

23. In regards to claim 19, Smith discloses the method of claim 12, as disclosed hereinabove. In addition, Smith discloses further comprising capturing the displayed calibration image using at least one of a color-sensing device, a colorimeter, a luminance meter, a color temperature meter, and a camera (col. 3: 18-26).

24. In regards to claim 20, Smith discloses a display device comprising:

- a light engine apparatus configured to project a principal image and a calibration image onto a surface, where at least a portion of the calibration image has an intended first color characteristic (Figure 1B, Item 34; col. 3: 18-21);
- an optical unit configured to receive a reflection of the projected calibration image (Figure 1B, Item 40 discloses the display; col. 3: 18-21, 58-60); and a
- processor (col. 4: 5-16) configured to:
    - direct projection of the calibration image onto a calibration area of the surface when the principal image is not projected onto the calibration area (col. 3:18-26, 55-67);
    - compare the received calibration image to the calibration image to determine an observed difference (col. 3:18-26, 55-67); and
    - modify projection of the principal image based on the observed difference (col. 3: 32-35, 40-42).

25. In regards to claim 21, Smith discloses the display device of claim 20, as contained hereinabove. In addition, Smith discloses where the optical unit is at least one of a color-sensing device, a calorimeter, a luminance meter, a color temperature meter and a camera (col. 3: 18-26).

26. In regards to claim 22, Smith discloses the display device of claim 20, as contained hereinabove. In addition, Smith discloses the device further including memory connected to the processor, where the memory is configured to store the intended first color characteristic (col. 3: 32-34; Figure 1B, Item 46).

27. In regards to claim 23, Smith discloses the display device of claim 20, as contained hereinabove. In addition, Smith discloses where the light engine apparatus includes a light engine configured to project the principal image and a calibration light unit configured to project the calibration image (col. 3: 34-38, 58-60; Figure 1B, Item 34 - same unit).

28. In regards to claim 24, Smith discloses the display device of claim 23, as contained hereinabove. In addition, Smith discloses where the calibration light unit projects the calibration image along at least a portion of a light path along which the light engine projects the principal image (col. 3: 34-38, 58-60; Figure 1B, Item 34 - same unit and same light path).

29. In regards to claim 25, Smith discloses the display device of claim 24, as contained hereinabove. In addition, Smith discloses the device further comprising an optical device configured to insert the calibration image into the light path along which the principal image is projected (col. 3: 34-38, 58-60; Figure 1B, Item 34 - same unit and same light path).

30. In regards to claim 26, Smith discloses the display device of claim 25, as contained hereinabove. In addition, Smith discloses where the optical unit receives the displayed calibration image along at least a portion of the light path along which the calibration light unit projects the calibration image (col. 3: 34-38, 58-60; Figure 1B, Item 34 - same unit and same light path).

31. In regards to claim 27, Smith discloses the display device of claim 23, as contained hereinabove. In addition, Smith discloses the device further comprising a first

housing containing the light engine (Figure 1B, Item 34), and a second housing containing the optical unit (Figure 1B; Item 40 is the optical unit [display]; col. 2: 35-38).

32. In regards to claim 28, Smith discloses the display device of claim 27, as contained hereinabove. In addition, Smith discloses where the second housing is freely movable relative to the first housing (Figure 1B; col. 2: 35-38).

33. In regards to claim 29, Smith discloses the display device of claim 28, as contained hereinabove. In addition, Smith discloses the device further comprising an output device mounted on the second housing, the output device coupled to the optical unit for outputting a signal representative of the received displayed calibration image (col. 2: 38-48).

34. In regards to claim 30, Smith discloses the display device of claim 29, as contained hereinabove. In addition, Smith discloses where the output device and optical unit are configured to output a signal representative of a received first color characteristic (col. 2: 40-42).

35. In regards to claim 31, Smith discloses the display device of claim 29, as contained hereinabove. In addition, Smith discloses the device further comprising an input device mounted on the first housing, the input device coupled to the processor for inputting the signal representative of the received displayed calibration image (Figures 1A and 1B; col. 4: 5-16).

36. In regards to claim 32, Smith discloses the display device of claim 23, as contained hereinabove. In addition, Smith discloses where the processor is further configured to:

- determine an actual first color characteristic of at least a portion of the received calibration image (col. 3: 18-26);
- calculate a difference between intended and actual first color characteristics for corresponding portions of the calibration image and the received calibration image (col. 3: 18-26; 32-35; col. 4: 65 through col. 5: 1);
- calculate a correction based on the calculated difference between the intended and actual first color characteristics (col. 3: 18-26; 32-35, 40-42; col. 4: 65 through col. 5: 1); and

modify projection of at least one of the principal image and the calibration image based on the correction (col. 3:31-35, 40-42).

37. In regards to claim 33, Smith discloses the display device of claim 32, as contained hereinabove. In addition, Smith discloses where the light engine is configured to project the principal image onto a principal area of the surface including at least a portion of the calibration area (col. 3: 18-26; 32-35, 40-42), and the processor is further configured to direct the light engine not to project the principal image onto at least the calibration area of the surface while the calibration image is being projected (col. 4: 5-16).

38. In regards to claim 34, Smith discloses the display device of claim 33, as contained hereinabove. In addition, Smith discloses the device further comprising an input device coupled to the processor and configured to be manually actuated (col. 7:

58-64), the processor being configured to initiate projection of a calibration image when the input device is actuated (col. 4: 5-16).

39. In regards to claim 35, Smith discloses the display device of claim 32, as contained hereinabove. In addition, Smith discloses where the processor is further configured to terminate projection of the principal image on at least the calibration area of the surface while projecting the calibration image (col. 3: 18-26; 32-35, 40-42; col. 4: 5-16).

40. In regards to claim 36, Smith discloses the display device of claim 32, as contained hereinabove. In addition, Smith discloses where the color characteristic is at least one of an average color, a chromaticity, a color temperature and a luminance (col. 4: 65-67).

41. In regards to claim 37, Smith discloses the display device of claim 36, as contained hereinabove. In addition, Smith discloses where the average color includes one or more of an average red intensity, an average blue intensity and an average green intensity (col. 2: 40-47; col. 7: 40-57).

42. In regards to claim 38, Smith discloses a calibration unit for use with a projector configured to project a principal image onto a surface and having selectable color compensation, the calibration unit comprising:

- a calibration light unit configured to project an intended calibration image onto the surface (Figure 1B, item 34);
- an optical unit configured to receive the reflection of the projected calibration image (Figure 1B, item 40); and

- an output device coupled to the optical unit for outputting a signal corresponding to the received calibration image (Figure 1B, Item 12).

43. In regards to claim 39, Smith discloses a display device comprising:

- means for projecting a principal image onto a surface (col. 2: 62-64; col. 3: 58-60; col. 4: 5-16);
- means for projecting a calibration image onto a calibration area of the surface when the principal image is not projected onto the calibration area (col. 2: 62-64; col. 3: 58-60; col. 4: 5-16);
- means for receiving the calibration image displayed on the surface (col. 2: 62-64; col. 3: 58-60; col. 4: 5-16);
- means for comparing the received calibration image to the calibration image projected to determine an observed difference (col. 2: 62-64; col. 3: 18-26, 58-60; col. 4: 5-16); and
- means for modifying projection of the principal image based on the observed difference (col. 2: 62-64; col. 3: 35-42, 58-60; col. 4: 5-16).

44. In regards to claim 40, Smith discloses a storage medium readable by a processor, having embodied therein a program of commands executable by the processor (col. 4: 5-32) to:

- project a principal image onto a surface (col. 2: 62-64; col. 3: 58-60; col. 4: 5-16);
- project a calibration image onto a calibration area of the surface when the principal image is not projected onto the calibration area;

- receive the calibration image displayed on the surface (col. 2: 62-64; col. 3: 18-26, 35-42, 55-60; col. 4: 5-16);
- compare the calibration image received to the calibration image projected to determine an observed difference (col. 2: 62-64; col. 3: 35-42, 58-60; col. 4: 5-16); and
- modify projection of the principal image based on the observed difference (col. 2: 62-64; col. 3: 35-42, 58-60; col. 4: 5-16).

45. In regards to claim 41, Smith discloses an electronic device comprising:

- a light engine apparatus configured to project a principal image and a calibration image onto a surface, where a portion of the calibration image has an intended first color characteristic (col. 3: 18-26); and
- an optical unit configured to receive the displayed image of the projected calibration image (Figure 1B, item 40; col. 3: 55-62);
- the light engine apparatus and the optical unit cooperating to:
    - project the calibration image onto a calibration area of the surface when the principal image is not projected onto the calibration area (col. 3:18-26, 55-67);
    - determine an actual color characteristic for a portion of the displayed calibration image corresponding to the portion of the calibration image (col. 3:18-26, 55-67; col. 4: 65 through col. 5: 1);
    - calculate a difference between the intended and actual color characteristics (col. 3:18-26, 55-67); and

- modify projection of the principal image based on the calculated difference (col. 3:31-35, 40-42).

Conclusion

46. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alysa N. Brautigam whose telephone number is 571-272-7780. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

anb

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